

Is it the nicotine or the tobacco?

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Recent years have seen a growing recognition that product regulation is critical to dealing effectively with the tobacco epidemic. It is also now widely recognized that, though it is the nicotine that causes dependence, tobacco products (which can be characterized as particularly 'dirty' drug delivery devices) are responsible for the vast majority of the damage to health. This duality of a drug and a delivery system has led to different approaches to tobacco product regulation. Some feel that we need to look at removing the nicotine (perhaps very gradually) from tobacco products until they are no longer addictive. Others believe that we should focus on the delivery vehicle and on making alternative — safer — forms of nicotine more readily accessible to consumers.

These approaches are, in fact, complementary if we take a pragmatic approach to dealing with the tobacco epidemic. The best form of product regulation would be multifaceted and would reflect the needs of smokers and the other elements of successful tobacco control interventions.

The overall goal would be to assist cessation. Tobacco products are consumed for a variety of reasons that combine pleasure, dependence and self-medication. Discussions of 'harm reduction', such as less deadly cigarettes and alternative safer forms of nicotine, are based on concern over the hard core of, usually heavy, smokers who will not quit. Whether this hard core is over 20% or less than 10% of any particular population, the key point is that the people in question cannot simply be left to die prematurely.

But distinguishing the hard core from those who are interested in quitting, and capable of it, is critical. A very large proportion of smokers want to quit both smoking and nicotine use. Any comprehensive regulatory regime should do all it can to facilitate this goal. Products and services that have been proved effective in smoking cessation should be widely available and should have marketplace advantages (price, promotion, distribution outlets, package sizes, etc.) compared with tobacco products. If we help those who are already motivated to quit we will have solved a huge part of the tobacco problem, not only through the use of existing products and services, but also through the incentive for better interventions as the market for these goods and services is allowed to grow to meet consumer demand.

For people who cannot or will not be able to exit completely both the tobacco and nicotine markets we should be looking at ways of allowing them to move to alternative forms of nicotine. This could be for a few months or for the rest of their lives depending upon the consumer need, and should be seen as analogous to the treatment of any other chronic, relapsing condition. If a tobacco user can only abstain from smoking through the use of a therapeutic dose of 'clean' nicotine, this should be an option. Such products should be made available, and not placed at a marketing disadvantage compared with tobacco products.

For those who cannot or will not completely cease using tobacco products, products and services should be available that can help them reduce their tobacco consumption. This can be accomplished through policies that, for instance, allow therapeutic products to be used for smoking reduction and temporary abstinence by smokers not yet ready to quit completely. Such measures offer safer alternatives, allow smokers to gain control over their tobacco use, and reduce the exposure of themselves and others to the toxins in tobacco smoke.

With sufficient efforts aimed at providing consumers with viable choices for cessation, treatment and smoking reduction, the tobacco market should be much smaller. But, as it will still exist, less deadly tobacco products should have regulatory advantages over the most deadly products. Tobacco products that do not require combustion (such as the 'snus' sold in Sweden) offer clear advantages. So, too, do products that primarily heat rather than burn tobacco. But the marketing of these products should not obscure the greater advantages of 'cleaner' delivery systems and of cessation, and the marketing of such products should only be allowed within a strong, resourced and expert regulatory oversight to ensure that such products are truly reducing aggregate harm.

Once other choices are available to consumers, existing tobacco products can more effectively be subjected to greater product regulation and marketplace disadvantages. These products could, over time, be de-nicotinized. They could be made less palatable to children, subjected to higher prices, contained to restricted sales outlets or otherwise made less viable. But it is through answering the needs of existing users that these restrictions will become commercially and politically viable. ■

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Taking the nicotine out of cigarettes – why it is a bad idea

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Sometimes, what seems to be an obvious common-sense idea can make a bad situation much worse. One such idea is the removal of nicotine from tobacco products to make them less addictive. Nicotine is addictive, it is the reason why people smoke, and smoking tobacco without nicotine is no more appealing than smoking dried cabbage. And so, it is argued, why not use regulatory powers to require the gradual removal of nicotine from tobacco products? Could this free smokers from their dependence and stop a new generation of children becoming addicted? This approach is advocated by the American Medical Association, though with some qualification (see <http://tc.bmjournals.com/content/vol7/issue3/>). It was also voiced by a number of the participants at a recent WHO seminar on the regulation of tobacco products, which ultimately recommended that governments “give urgent priority to studying the implications for harm reduction of reducing levels of nicotine and other possible addictive constituents in tobacco products over time” (see <http://www.who.int/toh/natcapacity/prodregulation/oslo/osloreport.htm>). This recommendation was a compromise between those who want nicotine removed and others, like me, who think it would not work at all.

The basic reality of tobacco use is the self-administration of nicotine, a powerfully addictive psychoactive drug, by over a thousand million people worldwide — a total likely to rise to 1 600 000 000 in the next twenty years. Tobacco users typically begin in the teenage years with a flirtation with the artificially created glamour, danger, and forbidden fruit of smoking and to feel a peer-group bonding with those around them who are engaging in the same flirtation. After a while — as little as a few months — the habit is reinforced by addiction: modification of the smoker’s behaviour to seek the reward and avoid the unpleasant withdrawal. Tobacco users come to expect and need a certain dose of nicotine to get through the day. Quitting becomes harder, and the addiction becomes entrenched and consolidated by behavioural and social reinforcement.

The problem with the nicotine-removal idea is that tobacco users would continue to seek nicotine up to the level that provides a satisfactory dose. This is the reason why ‘light’ cigarettes are such a fraud. With light cigarettes, the smoke is diluted with air drawn through ventilation holes in the filter, but smokers respond by taking in more of the weaker smoke to attain the nicotine they need. The machines used for measuring cigarettes do not respond in this way, so

the light cigarettes give low tar and nicotine readings on machines but unchanged doses to the smoker. Switching from full-flavour cigarettes to light cigarettes is a little like trying to reduce alcohol intake by switching from wine to beer.

With light cigarettes the tobacco is almost the same as in conventional cigarettes, and an attempt to reduce its nicotine content would make matters worse: the smoke would not be diluted, but it would have a lower concentration of nicotine. This means smokers would be taking in more undiluted smoke to attain the nicotine they need. If this happened their toxic exposure would *increase* and the health impact would be serious — possibly adding millions to the expected tobacco-related death toll.

The idea of removing nicotine also has to be acknowledged as prohibition. Smokers who experience withdrawal would be more likely to seek illegal supplies, hand rolling tobacco, etc., rather than quit. And while nicotine products are available in some form, teenagers would simply continue to do what adults do. If a government tried to remove alcohol from whisky, but claimed that it was not engaging in prohibition because whisky without alcohol could still be sold, we would not be so easily fooled. A worldwide ban on nicotine is a political non-starter and would be a disaster.

If removing nicotine will not work, what is the alternative? It should be recognized that nicotine is a widely used, addictive and legal drug in society — but its delivery system kills one in two long-term users, and this level of harm justifies serious regulatory controls and interventions. Regulators should be concentrating on cleaning up the delivery system, and tending to *increase* the amount of nicotine in the smoke relative to toxic smoke constituents such as tar and carbon monoxide. Regulatory pressure may be used to force selective reduction of tobacco toxins relative to nicotine by the use of chemically active filters, a switch from burning to heating tobacco, and greater use of oral tobacco, tobacco distillates and perhaps, ultimately, to nicotine delivery devices that do not use tobacco at all but, unlike current nicotine replacement therapies (patches and gum, etc.), deliver a psychoactive and satisfying dose of nicotine to the addict. None of these approaches avoids all harm — far from it — but the evolution (rather than prohibition) of addictive nicotine delivery products represents an important strategy in reducing tobacco-related deaths in the 21st century.

Dealing with nicotine addiction involves many of the established tools of tobacco control: price increases, advertising bans, communications programmes, restrictions on smoking at work and in public places, and access to good treatment for dependence. Addiction to nicotine cannot be tackled by modifying the product. ■

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